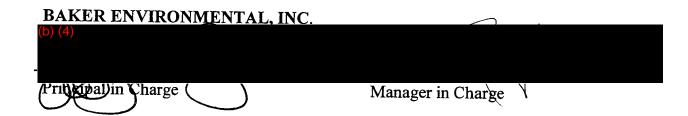
### Former Rich Hill Compressor Station Characterization Report

Muskingum County, Ohio

May 14, 1999

Prepared for Columbia Gas Transmission Corporation By:



ENVIRONMENTAL STANDARDS, INC.

(b) (4)

Data Management and Verification
Manager

Data Validation Manager

### 2.0 ENVIRONMENTAL SETTING

### 2.1 **Physical Setting**

The Former Rich Hill CS is in an undeveloped area of low to moderate topographic relief. The station does not appear to be in a flood-prone area, however, there is a small unnamed tributary to Buffalo Fork crossing immediately adjacent to SR 146. The unnamed tributary base levels are approximately 780 feet above mean sea level (MSL), while ridge tops range from 800 feet to more than 1,000 feet MSL. The CS is approximately 800 feet above MSL (USGS, Norwich Quadrangle 1989). The operating portion of this compressor station occupies less than one-quarter acre. It is a rectangular area approximately 75 feet by 60 feet. There are no gates, fences, or CS buildings.

The ground surface at the CS consists of gravel and grass and slopes downward losing approximately five feet in elevation over approximately 100 feet in distance (northeast of the CS). Land use in the vicinity of the CS (within 1,000 feet) includes an unnamed tributary and SR 146 to the north, woodlands to the south and east, and an unrelated compressor station and woodlands to the west.

### 2.2 Climate

The portion of Ohio in which the CS is located receives mean annual precipitation of approximately 37 inches. Prevailing winds are generally from the south. Temperatures vary widely, with average lows during the winter months reaching 21 degrees Fahrenheit to highs during the summer months reaching 82 degrees Fahrenheit. The greatest levels of precipitation occur in the spring, while the lowest levels occur in late summer (Soil Survey of Muskingum County, Ohio, 1996).

### 2.3 Surface Water Hydrology

The CS does not appear to be in a flood-prone area, however, there is a small unnamed tributary crossing topographically downgradient, immediately adjacent to SR 146. This unnamed tributary flows west to Buffalo Fork, which then discharges into Salt Creek (USGS, 1984). Surface drainage, based on elevation contours, flows northeast toward the unnamed tributary. However, there does not appear to be a predominant drainage pathway.

### 2.4 Geology and Soils

The Former Rich Hill CS is located on the unglaciated, dissected Allegheny Plateau Physiographic Province (Figure 2-1). The bedrock of this region is sedimentary, consisting of mainly Pennsylvanian System/Conemaugh Group bedrock. The bedrock consists mainly of shale, siltstone, mudstone, limestone, and coal with the bedrock thickness ranging between 350 and 490 feet.

Soils at the Former Rich Hill CS are identified as Westmoreland-Guernsey silt loam, 15 to 25 percent slopes, eroded (WuD2). This series consists of deep, moderately steep soils on dissected hillsides and benches. Soils are typically well drained near the ground surface, but become more clayey and less permeable with depth as silty clays are encountered. (Soil Survey of Muskingum County, Ohio, 1996).

### 2.5 <u>Hydrogeology and Groundwater Quality</u>

In valley bottoms, useable quantities of groundwater are generally obtained from both shallow dug wells in unconsolidated deposits and/or deeper wells installed into bedrock formations. In other topographic areas, wells completed in bedrock or springs are a source of potable water supplies.

The county is drained by the Muskingum River and its main tributaries, the Licking River, and several creeks, including Salt Creek. The supply of groundwater is limited in most of the county. The principal source of groundwater is recharge from local precipitation. Flood plains along the Muskingum River serve as a source of groundwater through extraction wells. In outlying areas, wells placed in fill of valley bottoms are limited due to contamination from area mine waste. In upland areas, groundwater wells generally withdraw from the Pennsylvanian-age sandstones (Soil Survey of Muskingum County, 1996).

Because groundwater was not encountered during the Geoprobe® boring advancement portion of the characterization field activities (maximum depth of 11.2 feet bgs), detailed information on the Site specific hydrogeology and groundwater quality of the subject property is not readily available. However, based upon the topographic position of the CS, it can be reasonably assumed that the depth

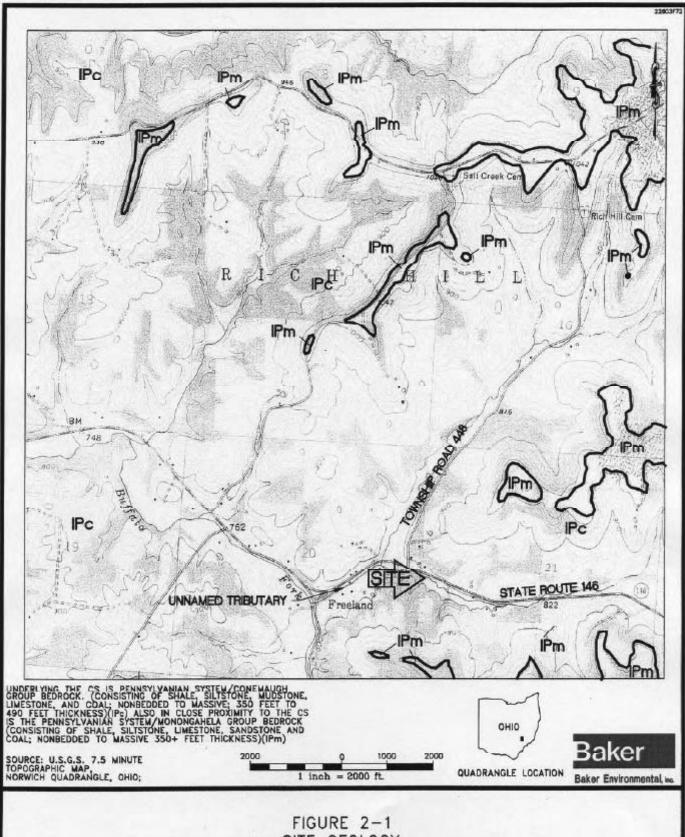


FIGURE 2-1 SITE GEOLOGY FORMER RICH HILL COMPRESSOR STATION

COLUMBIA GAS TRANSMISSION CORPORATION MUSKINGUM COUNTY, OHIO

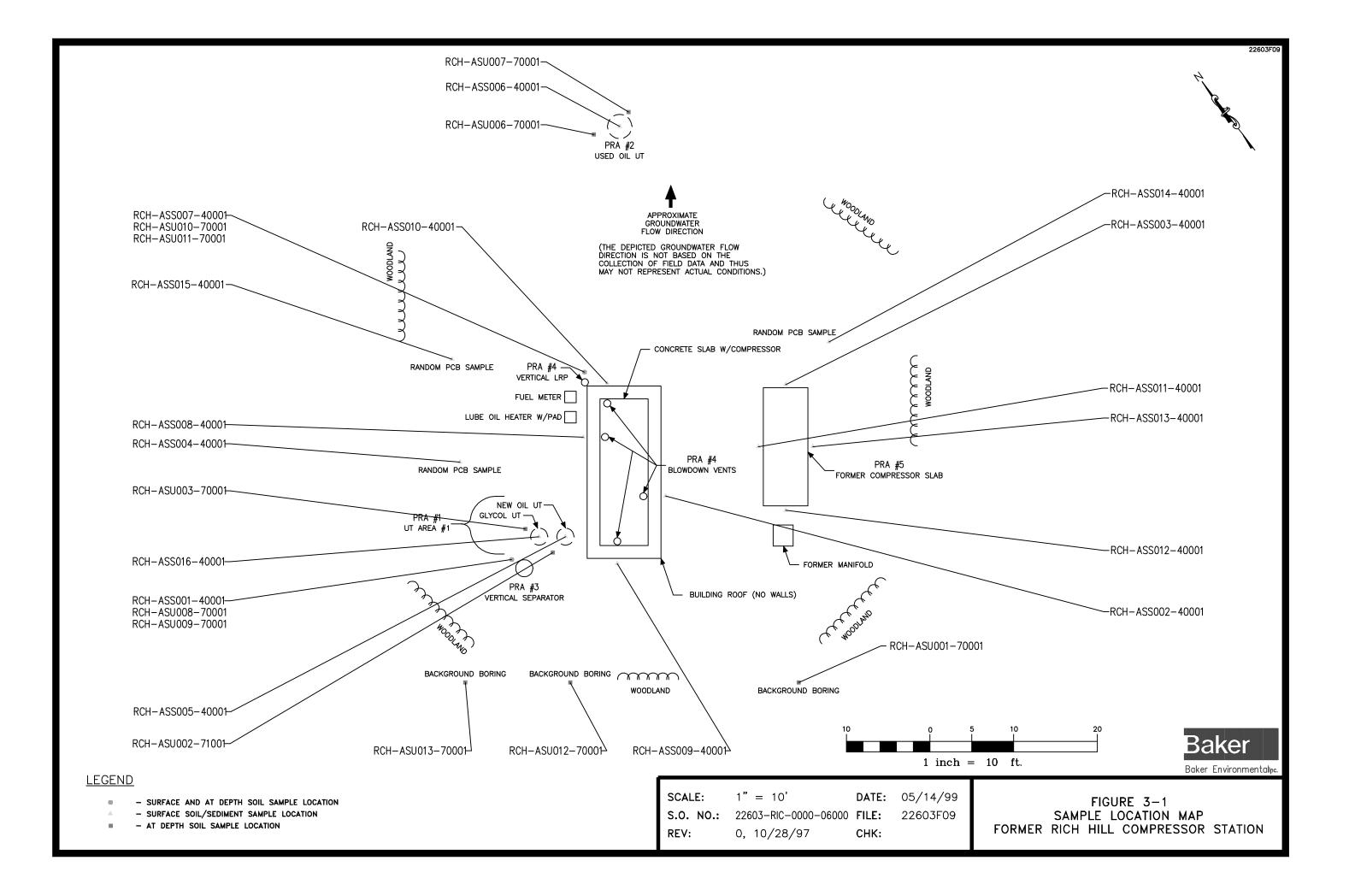


Table 4-3
Summary of Analytical Results

		PRA	1						
		PRA Description	PRA #1 UT AREA #1	L					
		Sample Type	Field Duplicate (Rep	)	Normal Sample				
		Sample Id	RCH-ASU002-71001		RCH-ASS005-40001		RCH-ASS016-40001		
		Depth - ft bgs			0 - 1		0 - 1		
		Result Units			MG/KG		MG/KG		
Category	Analyte	Action Level	Result Flag	> CAL*	Result Flag	> CAL*	Result Flag	> CAL*	
	BARIUM, TOTAL	5500			96.9				
	BERYLLIUM, TOTAL	160			ND				
	CHROMIUM, TOTAL	230			14.6				
	LEAD, TOTAL	400			ND				
	NICKEL, TOTAL	1600			21.2				
	ARSENIC, TOTAL	.43			7.2 J	X			
INORGANIC	PETROLEUM HYDROCARBON		ND		ND		710		

J flag - Numerical value is an estimated quantity.

ND indicates Non-Detect

<sup>\* &</sup>quot;> CAL" equals "X" when reported value is above characterization action level for this locale.

Table 4-3
Summary of Analytical Results

		PRA	-				2		
		PRA Description					PRA #2 UT AREA #	2	
		Sample Type					Normal Sample		
		Sample Id	RCH-ASU002-70001		RCH-ASU003-70001		RCH-ASS006-40001		
		Depth - ft bgs	8.1 - 9.1		9.3 - 10.3		0 - 1		
		Result Units	MG/KG		MG/KG		MG/KG		
Category	Analyte	Action Level	Result Flag	> CAL*	Result Flag	> CAL*	Result Flag	> CAL*	
METAL	BARIUM, TOTAL	5500					30.4		
	BERYLLIUM, TOTAL	160					ND		
	CHROMIUM, TOTAL	230					5.4		
	LEAD, TOTAL	400					ND		
	NICKEL, TOTAL	1600					11.6		
	ARSENIC, TOTAL	.43					7.1 J	X	
INORGANIC	PETROLEUM HYDROCARBON		ND		ND				

J flag - Numerical value is an estimated quantity.

ND indicates Non-Detect

<sup>\* &</sup>quot;> CAL" equals "X" when reported value is above characterization action level for this locale.

Table 4-3
Summary of Analytical Results

		PRA	-				3	
		PRA Description	-				PRA #3 SEPARATO	)R
		Sample Type					Normal Sample	
		Sample Id	RCH-ASU006-70001		RCH-ASU007-70001	<u>[</u>	RCH-ASS001-40001	
		Depth - ft bgs	9.8 - 10.8		10.2 - 11.2		0 - 1	
		Result Units MG/KG MG/KG				MG/KG		
Category	Analyte	Action Level	Result Flag	> CAL*	Result Flag	> CAL*	Result Flag	> CAL*
METAL	BARIUM, TOTAL	5500	117		118			
	BERYLLIUM, TOTAL	160	ND		ND			
	CHROMIUM, TOTAL	230	25.1		27.3			
	LEAD, TOTAL	400	28.4		ND			
	NICKEL, TOTAL	1600	36.1		32.3			
	ARSENIC, TOTAL	.43	15.3 J	X	4.7 J	X		
INORGANIC	PETROLEUM HYDROCARBON						ND	

J flag - Numerical value is an estimated quantity.

ND indicates Non-Detect

<sup>\* &</sup>quot;> CAL" equals "X" when reported value is above characterization action level for this locale.

Table 4-3
Summary of Analytical Results

		PRA						
		PRA Description						
		Sample Type						
		Sample Id	RCH-ASS007-40001		RCH-ASU008-70001		RCH-ASU009-70001	
		Depth - ft bgs	0 - 1		1.5 - 2.5		4 - 5	
		Result Units	MG/KG		MG/KG		MG/KG	
Category	Analyte	Action Level	Result Flag	> CAL*	Result Flag	> CAL*	Result Flag	> CAL*
METAL	BARIUM, TOTAL	5500						
	BERYLLIUM, TOTAL	160						
	CHROMIUM, TOTAL	230						
	LEAD, TOTAL	400						
	NICKEL, TOTAL	1600						
	ARSENIC, TOTAL	.43						
INORGANIC	PETROLEUM HYDROCARBON	-	ND		ND		ND	

J flag - Numerical value is an estimated quantity.

ND indicates Non-Detect

<sup>\* &</sup>quot;> CAL" equals "X" when reported value is above characterization action level for this locale.

Table 4-3 Summary of Analytical Results

		PRA					4	
		PRA Description					PRA #4 BLOWDOW	NS/VENTS/V
		Sample Type					Normal Sample	
		Sample Id	RCH-ASU010-70001		RCH-ASU011-70001		RCH-ASS002-40001	
		Depth - ft bgs	1.5 - 2.5		4 - 5		0 - 1	
		Result Units MG/KG MG/KG			MG/KG			
Category	Analyte	Action Level	Result Flag	> CAL*	Result Flag	> CAL*	Result Flag	> CAL*
METAL	BARIUM, TOTAL	5500						
	BERYLLIUM, TOTAL	160						
	CHROMIUM, TOTAL	230						
	LEAD, TOTAL	400						
	NICKEL, TOTAL	1600						
	ARSENIC, TOTAL	.43						
INORGANIC	PETROLEUM HYDROCARBON		ND		ND		160	

J flag - Numerical value is an estimated quantity.

ND indicates Non-Detect

<sup>\* &</sup>quot;> CAL" equals "X" when reported value is above characterization action level for this locale.

Table 4-3
Summary of Analytical Results

		PRA							
		PRA Description	ERTICAL LRP						
		Sample Type							
		Sample Id	RCH-ASS008-40001		RCH-ASS009-40001		RCH-ASS010-40001		
		Depth - ft bgs	0 - 1		0 - 1		0 - 1		
		Result Units	MG/KG		MG/KG		MG/KG		
Category	Analyte	Action Level	Result Flag	> CAL*	Result Flag	> CAL*	Result Flag	> CAL*	
	BARIUM, TOTAL	5500							
	BERYLLIUM, TOTAL	160							
	CHROMIUM, TOTAL	230							
	LEAD, TOTAL	400							
	NICKEL, TOTAL	1600							
	ARSENIC, TOTAL	.43							
INORGANIC	PETROLEUM HYDROCARBON		3100		66.0		ND		

J flag - Numerical value is an estimated quantity.

ND indicates Non-Detect

<sup>\* &</sup>quot;> CAL" equals "X" when reported value is above characterization action level for this locale.

Table 4-3
Summary of Analytical Results

		PRA	5					
		PRA Description	PRA #5 OLD PAD A	REA				
		Sample Type	Field Duplicate (Rep)		Normal Sample			
		Sample Id	RCH-ASS013-41001		RCH-ASS003-40001		RCH-ASS011-40001	
		Depth - ft bgs			0 - 1 MG/KG		0 - 1	
		Result Units					MG/KG	
Category	Analyte	Action Level	Result Flag	> CAL*	Result Flag	> CAL*	Result Flag	> CAL*
	BARIUM, TOTAL	5500						
	BERYLLIUM, TOTAL	160						
	CHROMIUM, TOTAL	230						
	LEAD, TOTAL	400						
	NICKEL, TOTAL	1600						
	ARSENIC, TOTAL	.43						
INORGANIC	PETROLEUM HYDROCARBON		ND		13.0		110	

J flag - Numerical value is an estimated quantity.

ND indicates Non-Detect

<sup>\* &</sup>quot;> CAL" equals "X" when reported value is above characterization action level for this locale.

Table 4-3
Summary of Analytical Results

		PRA	-				6		
		PRA Description	-				BACKGROUND		
		Sample Type					Normal Sample		
		Sample Id	RCH-ASS012-40001		RCH-ASS013-40001		RCH-ASU001-70001		
		Depth - ft bgs	0 - 1		0 - 1		1 - 3		
		Result Units	MG/KG		MG/KG		MG/KG		
Category	Analyte	Action Level	Result Flag	> CAL*	Result Flag	> CAL*	Result Flag	> CAL*	
METAL	BARIUM, TOTAL	5500					134		
	BERYLLIUM, TOTAL	160					1.7		
	CHROMIUM, TOTAL	230					26.9		
	LEAD, TOTAL	400					ND		
	NICKEL, TOTAL	1600					38.6		
	ARSENIC, TOTAL	.43					10.6 J	X	
INORGANIC	PETROLEUM HYDROCARBON		52.0		ND				

J flag - Numerical value is an estimated quantity.

ND indicates Non-Detect

<sup>\* &</sup>quot;> CAL" equals "X" when reported value is above characterization action level for this locale.

Table 4-3
Summary of Analytical Results

		PRA	_				7	
		PRA Description					PRA #7 RANDOM	PCB SAMPLES
		Sample Type					Normal Sample	
		Sample Id	RCH-ASU012-70001		RCH-ASU013-70001	[	RCH-ASS004-40001	
		Depth - ft bgs	1 - 3		1 - 3		05	
		Result Units	MG/KG		MG/KG		MG/KG	i
Category	Analyte	Action Level	Result Flag	> CAL*	Result Flag	> CAL*	Result Flag	> CAL*
METAL	BARIUM, TOTAL	5500	108		163			
	BERYLLIUM, TOTAL	160	ND		1.9			
	CHROMIUM, TOTAL	230	24.0		30.8			
	LEAD, TOTAL	400	ND		ND			
	NICKEL, TOTAL	1600	26.7		36.0			
	ARSENIC, TOTAL	.43	5.8 J	X	13.5 J	X		
INORGANIC	PETROLEUM HYDROCARBON							

ND indicates Non-Detect

<sup>\* &</sup>quot;> CAL" equals "X" when reported value is above characterization action level for this locale.

J flag - Numerical value is an estimated quantity.

Table 4-3
Summary of Analytical Results

		PRA				
		PRA Description	<u>s</u>			
		Sample Type				
		Sample Id	RCH-ASS014-40001		RCH-ASS015-40001	
		Depth - ft bgs	05		05	1
		Result Units	MG/KG		MG/KG	
Category	Analyte	Action Level	Result Flag	> CAL*	Result Flag	> CAL*
METAL	BARIUM, TOTAL	5500				
	BERYLLIUM, TOTAL	160				
	CHROMIUM, TOTAL	230				
	LEAD, TOTAL	400				
	NICKEL, TOTAL	1600				
	ARSENIC, TOTAL	.43				
INORGANIC	PETROLEUM HYDROCARBON					

J flag - Numerical value is an estimated quantity.

ND indicates Non-Detect

<sup>\* &</sup>quot;> CAL" equals "X" when reported value is above characterization action level for this locale.

## APPENDIX F

## CS Boring Logs

# \$10 P.O. Baker Environmental

PROJECT:	Site	Character	rization at	Columbia	Gas	Transmiss	ion - Former Ric	h Will C	omnroco	or Ctatio	
SO NO.:	2200	3-RIC				BORING	NO:		Boring A		<u> </u>
COORDINAT	ES: EAS'	Г:				NORTH:		11001-	Dorling A	<u> </u>	
ELEVATION	SUR	FACE:		-			PVC CASING:	***************************************			······································
Rig: Geor	robe		<del></del>		$\neg$	·	T	T			Donal 4
	MC Liners	Casing	Augers	Core Barrel		Date	Progress (Ft.)		Weath	er	Depth to Water (Ft.)
Size (ID)	1-5/8" I.D.				2/	3/1997	0.0 - 9.1	Cloud	y 47F		
Length	4.0 feet								K		
Туре										·	<del> </del>
Hammer Wt.	***										
Fall											
Remarks: Sai	mpled for (	Glycol,TI	OH and BT	ΈX							
_		IPLE T		<del></del>			WELL	NFOR	MATIO	Ň	
	S = Split S									Тор	Bottom
	T = Shelb					1	Type		Diam.	Depth	Depth
	R = Air R		C = Core							(Ft.)	(Ft.)
	D = Denis		P = Piston							<u> </u>	(- 4/)
		No Sam	ple								
	Sample	Sample		PID					W	ell	Elevation
Depth (Ft.)	Type &	Rec.	Lab ID	(ppm)		Vi	isual Description		Instal	lation	(Ft. MSL)
	No.	(Ft.,%)							De	tail	<u> </u>
1	N		RCH-ASU 002-71001	0.0		gravels; remedhigh	ay w/trace silt & ed-brown(clay), n plasticity els more red-brow	noist,			-
10 _						Bottom of Bor REFUSAL		-			
RILLING CO.: RILLER:	Subsur (b) (4)	face. Inc	····				AKER KEI	) (4) PRA1-Bor	ing A	SHEET	CLOFI

# Baker Environmental

PROJECT:	Site	Character	rization at	Columbi	a Gas	Transmiss	ion - Former Ri	ch Hill C	ompress	or Statio	n
SO NO.:	2260	3-RIC		···		BORING	3 NO.:		Boring B		
COORDINAT						NORTH:					^
ELEVATION	: SUR	FACE:				TOP OF	PVC CASING:				
Rig: Geor	orobe				T		T	T			Depth to
	MC	Casing	Augers	Core		Date	Progress		Weath	er	Water
	Liners			Barre	el le		(Ft.)		*********		(Ft.)
Size (ID)	1-5/8" I.D.				2/	3/1997	0.0 - 10.3	Cloud	v 47F		
Length	4.0 feet								·		<del> </del>
Туре											
Hammer Wt.											
Fall											
Remarks: Sa	mpled for (	Glycol,TD	OH and B7	EX							**************************************
	G 4 3					·					
		MPLE TY					WELL	INFOR	MATIO	N	
	S - Spin T = Shelb		A = Auger				_		1	Тор	Bottom
	R = Air F	•	W = Wasn C = Core			1	Type		Diam.	Depth	Depth
	D = Denis	•	P = Piston							(Ft.)	(Ft.)
		No Sam				ļ	<del></del>				
	Sample	Sample		PID	<del></del>	<del> </del>			77	'ell	E.
Depth (Ft.)	Type &	Rec.	Lab ID	(ppm)		V	isual Description	n		llation	Elevation
	No.	(Ft.,%)		41-)		· '	Bam Description	**		tail	(Ft. MSL)
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10 10.3		10	003-70001	0.0		REFUSAL	∟ at 10.3'	10.3		ㅓ	
										$\dashv$	
RILLING CO.	: Subsur	face, Inc.				r	BAKER REP.:	(b) (4)			
RILLER:	(b) (4)	,					BORING NO.:	PRA1-Bo	ring P	CDEET	7 1 OF 1
							- JAMES 110.,	1 KA1-B0	mg D	SHEE	TOLI

# \$70 / Call Baker Environmental

# **TEST BORING RECORD**

PROJECT:	Site	Characte	rization at	Columbi	a Gas	Transmis:	sion - Former Ri	ch Hill C	ompress	or Statio	n
SO NO.:		3-RIC				BORING		PRA2-	Boring A		
COORDINATELEVATION						NORTH					
	. SUR	FACE:				TOP OF	PVC CASING:				
	MC Liners	Casing	Augers	Core Barre		Date	Progress (Ft.)		Weath	er	Depth to Water (Ft.)
Size (ID)	1-5/8" I.D.				2/3	3/97	0.0 - 5.0	cloud	47F		
Length	4.0 feet										<del>                                     </del>
Туре			-								
Hammer Wt.		<del>  -</del>		<del>  -</del>	_ _						
Fall		-									
Remarks: N	ortneast or	PRA 4/ b	etween sit	e and roa	id/ use	d oil UT					
		MPLE T					WELL	INFOR	MATIO	N	
			A = Auger				_		l	Тор	Bottom
	T = Shelb R = Air I	•	w = Wash C = Core			ľ	Type		Diam.	Depth	Depth
	D = Deni	-	P = Piston			<u> </u>				(Ft.)	(Ft.)
		= No Sam					1				ļ
	Sample	Sample		PID		<del> </del>			77	/ell	Elevation
Depth (Ft.)	Type &	Rec.	Lab ID	(ppm)		\ \	isual Description	n		llation	(Ft. MSL
	No.	(Ft.,%)		"		1			1	etail	(I C. MISE
1	N							9.8			-
	S-1		RCH-ASU	0.0		Shale belo	ow clay 10.8'	(b) (4)			
ORILLING CO	:: Subsur (b) (4)	rface, Inc.					BAKER REP.:	(b) (4)			
ORILLER:	(D) (H)						BORING NO.:	PRA2-Bo	ring A	SHEE'	TIOF 1

# 

# TEST BORING RECORD

Baker Environmental

PROJECT:

Site Characterization at Columbia Gas Transmission - Former Rich Hill Compressor Station

CTO NO.:

22603-RIC

SAMPLE TYPE

**BORING NO.:** 

PRA2-Boring A

**DEFINITIONS** 

S = Split Spoon
MSL = Mean Sea Level   ps/bg = point source/background   ps/bg =
Depth (Ft.)   Sample   Sample   Sample   Type & Rec.   SPT   ID   (ppm)   Visual Description   Installation   (Ft. MSL)
Depth (Ft.)   Early pe & Rec.   No.   (Ft. %)   SPT   ID   (ppm)   Visual Description     Well   Installation   (Ft. MSL)
Depth (Ft.)   Type & Rec.   No.   (Ft.,%)
No. (Ft.,%)
Bottom of boring 10.8' (Refusal @ 10.8')  Continued from Sheet 1  14
12
13 _ 14 _ 15 _ 16 _ 17 _ 18 _ 19 _ 19 _ 120 _ 121 _ 122 _ 123 _ 124 _ 13 _ 14 _ 15 _ 15 _ 15 _ 15 _ 15 _ 15 _ 15
14 _
14 _
15 _ 16 _ 17 _ 18 _ 19 _ 1
15 _ 16 _ 17 _ 18 _ 19 _ 1
16 _
16 _
17 _ 18 _ 19 _ 1
17 _ 18 _ 19 _ 1
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22
26
28
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29 _ ]
30 _

DRILLING CO.:

Subsurface, Inc.

DRILLER:

BAKER REP.:

BORING NO.: PRA2-Boring A

SHEET 2 OF 1

# Baker Environmental

PROJECT:	Site	Character	ization at	Columbia	Gas '	Transmiss	ion - Former Ri	ch Hill C	ompress	or Station	n	
SO NO.:	2260	3-RIC				BORING	NO.:		Boring B	or blade.		
COORDINAT	ES: EAS	Γ:				NORTH:			oning D	· · · · · · · · · · · · · · · · · · ·		
ELEVATION	: SURI	FACE:	<del></del>				PVC CASING:		<del>-</del>		· · · · · · · · · · · · · · · · · · ·	
Rig: Georg	orobe	······································					γ				T	
rug. Gco	MC	Casing	Augana	Come	_	D-4-					Depth to	
	Liners	Casing	Augers	Core		Date	Progress		Weath	er	Water	
Ci (CD)				Barre			(Ft.)				(Ft.)	
Size (ID)	1-5/8" I.D.			-	2/3	3/97	0.0 - 5.0	cloudy	/ 47F			
Length	4.0 feet											
Туре					_ _						<u> </u>	
Hammer Wt.												
Fall							ļ					
Remarks: No	ortheast of	PRA 4/ b	etween site	e and road	d/use	d oil UT						
	SAN	IPLE TY	/PE	<del></del>	<del></del>	<u> </u>	WELL	INFOR	MATIO	N		
	S = Split					<b> </b>	** 101010	TITOR	1110	Тор	Bottom	
	T = Shelb						Type		Diam.		1	
	R = Air F	•	C = Core				Type		Diam.	Depth	Depth	
	D = Denis	•	= Piston			······				(Ft.)	(Ft.)	
		No Sam						····	ļ			
	Sample	Sample	<u> </u>	PID					77	ell	Elevation	
Depth (Ft.)	Type &	Rec.	Lab ID	(ppm)		v	isual Description	n	1	llation	(Ft. MSL)	
<b>F</b> (- 1)	No.	(Ft.,%)	Date 1D	фрил		▼.	isuai Description	L		Detail		
		(= 5.7, 4)					<del></del>			1411		
1								_		_		
2										_		
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DRILLING CO		face, Inc.					BAKER REP.:	(*) ( .)				
DRILLER:	(b) (4)					]	BORING NO.:	PRA2-Bo	ring B	SHEE	Γ1 OF 1	



# TEST BORING RECORD

PROJECT:

Site Characterization at Columbia Gas Transmission - Former Rich Hill Compressor Station

CTO NO.:

22603-RIC

**BORING NO.:** 

PRA2-Boring B

		<u> </u>				BORING NO.:	PRA2-B	oring B					
	SAM	PLE TY	PE			<u>DEFINITIONS</u>							
	S = Split S	poon A	= Au	ger		SPT = Standard Penetration Test (ASTM D1586)							
ı	T = Shelby	Tube W	$V = W_2$	ash		PID = Photo Ionization Detector Measurement							
	R = Air R	otary (	$C = C_0$	оге		MSL = Mean Sea Level							
D = D	enison P=	Piston 1	N = N			ps/bg = point source/background							
1	Sample	Sample		Lab	PID			V	Vell	Elevation			
Depth (Ft.)	Type &	Rec.	SPT	ID	(ppm)	Visual Description			allation	(Ft. MSL)			
7	No.	(Ft.,%)						D	etail	ĺ í			
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DRILLING CO.:

Subsurface, Inc.

DRILLER:

BAKER REP.:

BORING NO.: PRA2-Boring B

SHEET 2 OF 1

# Saker Environmental

PROJEC		Site	Characte	rization at	Columb	ia Gas	Transmiss	sion - Former Ric	h Hill C	Ompress	or Statio	n
SO NO.	-	2260	3-RIC	_			BORING	NO.:	PRA3	ompress	or Statio	<del></del>
COORD	INA]	ES: EAS	T:		<del></del>	-	NORTH:				· · · · · · · · · · · · · · · · · · ·	<del></del>
ELEVA	TION	: SUR	FACE:			-		PVC CASING:			·	<u></u>
Rig:	Geor	probe			·····			T				T. 41.4
		MC	Casing	Augers	Cor		Date	Progress	İ	Weath		Depth to
		Liners			Barr		Daic	(Ft.)	1	WEALII	CI	Water
Size (ID	))	1-5/8" I.D.		<del> </del>		_	/3/97	0.0 - 5.0	oloud-	. 470		(Ft.)
Length		4.0 feet	<del> </del>	<del> </del>			0/0/	0.0 - 3.0	cloudy	/ 4/F		<del></del> -
Туре			<del></del>			-			<del></del>			<del> </del>
Hamme	r Wt.			<del> </del>				<u> </u>				ļ
Fall				<del> </del>					+	<del></del>		
Remark	s: U	pgradient o	of the sen	arator/drill		to LR	P off north	ern corner of sla	L CTDU	משפע מ	:	<u> </u>
			<b></b>		mg mont	. to Li	u om norm	con corner or sia	U (IFFI/I	DIEA, 2	jars per	sample)
		SAN	MPLE T	YPE			T	WELL.	INFOR	MATIO	N	
		S = Split	Spoon A	A = Auger			<b>——</b>	:	217 010		Тор	Bottom
		T = Shelb	y Tube V	W = Wash			1	Type		Diam.	Depth	Depth
		R = Air F		C = Core				-JP-			(Ft.)	(Ft.)
		D = Denis	son I	P = Piston					<del></del>		(1 (.)	(1 (.)
		N =	No Sam	ple								
		Sample	Sample		PID	······································				W	ell	Elevation
Depth (	(Ft.)	Type &	Rec.	Lab ID	(ppm)		$\mathbf{V}$	isual Description	1		lation	(Ft. MSL)
····		No.	(Ft.,%)		·		j ,				tail	(1 t. 1410L)
		S-1		RCH-ASS-	0.0							
1 _	1.0			001-40001					_		-	
_	1.5	N					1					
2		S-2		RCH-ASU-	0.0		1		7		-	
_	2.5			008-70001					_		-	
3 _							1					•
		N			ļ				-			
4 _	4.0					_	ŀ					
		S-3		RCH-ASU-	0.0		1				$\neg$	
5	5.0			009-70001		_	l		5.0		⊣	j
		İ	1	7			Bottom of	Boring at 5.0'				
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DRILLIN			face, Inc				F	BAKER REP.:	(b) (4)			
DRILLER	₹:	(b) (4)						BORING NO.:	PRA3		SHEET	[ 1 OF 1

# Baker Environmental

PROJEC	1:	Site	Characte	rization at	Columbi	a Gas	<b>Transmiss</b>	ion - Former Ric	h Hill C	ompress	or Statio	n
SO NO.:	- · ·		3-RIC				BORING		PRA4			
COORDI							NORTH:					
ELEVAT	NOL	: SUR	FACE:				TOP OF	PVC CASING:				
Rig:	Geor	orobe					<del></del>	T				Depth to
		MC	Casing	Augers	Core		Date	Progress		Weath	<b>~</b> ₩	Water
		Liners			Barre			(Ft.)		WCath	CI	(Ft.)
Size (ID)		1-5/8" I.D.					3/97	0.0 - 5.0	cloudy	, 17E	<del></del>	
Length		4.0 feet			<del> </del> _	一	0,01	0.0 - 3.0	Cioudy	/ <del>4</del> / Γ	<del></del>	
Туре				<del> </del>	<del>  _</del>		<del></del>				····	<del> </del>
Hammer	Wt.			<del></del>		$\dashv$			<del>- </del>			<u> </u>
Fall						$\dashv$			<del>- </del>			<del> </del>
Remarks	: D	rilling next	to LRP	<u> </u>	<u></u>				<del></del>			
	*************	SAN	MPLE T	YPE			T	WELL	INFOR	MATIO	N	
				A = Auger				WEEL	ALL OK	I	Top	Bottom
		T = Shelb	y Tube V	W = Wash			1	Type		Diam.	Depth	1
		R = Air F		C = Core			i	1.3pc		Diam.	(Ft.)	Depth (Ft.)
		D = Denis		P = Piston				·	····		(11.)	(Ft.)
٠			No Sam					····				
		Sample	Sample	^	PID		1		······································	W	ell	Elevation
Depth (F	řt.)	Type &	Rec.	Lab ID	(ppm)		V <sub>i</sub>	isual Description	1		llation	(Ft. MSL)
		No.	(Ft.,%)	!	"			obstrpaot	•	ľ	tail	(1 t. 1415L)
		S-1		RCH-ASS-	0.0		······			TT		
1	1.0			007-40001			İ		_		_	
	1.5	N					1		-		-	
2		S-2		RCH-ASU-	0.0		†				_	
	2.5			010-70001			ĺ					
3							1		_		_	-
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		S-3		RCH-ASU-	0.0		İ		-		-	
5 ]	5.0			011-70001	1				5.0		-	
							Bottom of	Boring at 5.0'			-	
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RILLING	÷ (^^	· Suhon	face, Inc				······································	AVED DED	(b) (4)		L	
RILLER:		(b) (4)	Tace, IIIC	•				BAKER REP.:				r I OF I
		\ / \ / /						ALDERINA POLIT	DDAA			

# 870 KGY Baker Environmental

# **TEST BORING RECORD**

BORING NO.: PRA6-Boring A

SHEET 1 OF 1

SO NO.   PRA6-Boring A   PRA6-Boring A	PROJECT:	Site	Characte	rization at	Columbia	Gas Transmiss	sion - Former Ri	ch Hill C	ompress	or Statio	n
COORDINATIES: EAST:	SO NO.:	2260	3-RIC			BORING	G NO.:				
Rig:   Geoprobe						NORTH	•				
MC	ELEVATION	: SUR	FACE:			TOP OF	PVC CASING:				
Casing   Auger   Core   Barrel   Date   Progress   Weather   Water (Ft.)	Rig: Geo	orobe						<del></del>	·		Denth to
Size (ID)			Casing	Augers		Date	_		Weath	er	Water
Leugth Type	Size (ID)					2/3/97		-			(FL)
Type   Hammer Wt.	, ,		_		<del> </del>	120,0,	0.0 - 3.0	<del></del> -			<del> </del>
Rammer Wt.				<del>                                     </del>	<del> </del>	<del>                                     </del>	<del>                                     </del>	<del></del>			<del> </del>
Remarks:   Background Samples-Table 1											<del>-</del>
SAMPLE TYPE   S = Split Spoon A = Auger   T = Shelby Tube   W = Wash   R = Air Rotary   C = Core   D = Denison   P = Piston   N = No Sample   Sample   Type & Rec.   Lab ID   (ppm)   Visual Description   No.   (Ft.,%)   N	Fall	~			<del></del>		<del> </del>	<del></del>	·····		
S = Split Spoon	Remarks: Ba	ackground	Samples-	Table 1	<del>!</del>						<u> </u>
S = Split Spoon		SAR	MDI E T	VDE	<del> </del>	<del></del>	******	77767	<b>3.5. 53.</b> 63.		
T = Shelby Tube W = Wash R = Air Rotary C = Core D = Denison P = Piston N = No Sample  Depth (Ft.)						<u> </u>	WELL	INFOR	MATIO		
R = Air Rotary   C = Core   D = Denison   P = Piston   N = No Sample   Sample   Type & Rec.   No.   (Ft. %)	[					i	T		D.	_	
D = Denison	1					l	Type		Diam.		
N   No   Sample   Sample   Rec.   Lab ID   (ppm)   Visual Description     Well   Installation   (Ft. MSL   No.   (Ft.,%)   N										(Ft.)	(Ft.)
Depth (Ft.)   Sample   Type & Rec.   Lab ID   (ppm)   Visual Description   Well   Installation   Detail   Ft. MSL						<del> </del>					
Depth (Ft.) Type & Rec. (Ft.%) Lab ID (ppm) Visual Description Installation Detail  1				pio	PID				- 17	7-11	777
No. (Ft.,%)  1	Depth (Ft.)			Lab ID	1	V	icual Decorintio	n			I .
1 1.0 N 1.0 I 1.0	^ `			240 12	(49)	<b>'</b>	isuai Description	11			(Ft. MSL
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3										_	1
3 3.0 3.0 Bottom of Boring at 3.0'  5	2	S-1		RCH-ASU-	0.0			-		_	ļ
Bottom of Boring at 3.0'  5				001-70001						_	
Bottom of Boring at 3.0'  5	3 3.0							3.0		_	
4 — 5 — 6 — 7 — — — — — — — — — — — — — — — —						Bottom of	f Boring at 3.0'		.		
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PRILLING CO.: Subsurface, Inc.  BAKER REP.: (b) (4)	<sup>7</sup> → 1			]						_	
PRILLING CO.: Subsurface, Inc.  BAKER REP.: (b) (4)	I	1	ļ			1					
DRILLING CO.: Subsurface, Inc.  BAKER REP.:	<sup>8</sup> →		-	1							
DRILLING CO.: Subsurface, Inc.  BAKER REP.:						i					
DRILLING CO.: Subsurface, Inc.  BAKER REP.: (b) (4)	" — I			Ì	İ				11		
DRILLING CO.: Subsurface, Inc.  BAKER REP.: (b) (4)	10 -	1		1	[						
DAKER REF.	10-							4		_	
DAKER REF.	DRILLING CO	· Subour	face Inc	<u></u>			DAKED SES	(b) (4)			
	DRILLER:		race, IIIC.							OTTO	7107

# Baker Environmental

PROJECT:	Site	Characte	rization at	Columbia	Gas	Transmiss	ion - Former R	ich Hill C	ompress	or Statio	n
SO NO.:	2260	3-RIC				BORING	NO.:		Boring B		
COORDINAT		T:				NORTH:			2012.52		
ELEVATION	: SUR	FACE:				TOP OF	PVC CASING				
Rig: Geor	orobe		<del></del>		Ŧ			_			Depth to
	MC Liners	Casing	Augers	Core Barrel		Date	Progress (Ft.)		Weath	er	Water (Ft.)
Size (ID)	1-5/8" I.D.				2/	3/97	0.0 - 3.0				
Length	4.0 feet										<del>                                     </del>
Туре											<del> </del>
Hammer Wt.											
Fall		<u> </u>									
Remarks: Ba	ackground	Samples-	Table 1			_					•
		MPLE T					WELI	INFOR	MATIO	N	
	S = Split	Spoon A	\ = Auger							Top	Bottom
	T = Shelb						Type		Diam.	Depth	Depth
	R = Air F		C = Core							(Ft.)	(Ft.)
	D = Denis		P = Piston								
		No Sam	ple								
Depth (Ft.)	Sample Type &	Sample	Y -1, TD	PID		]				'ell	Elevation
Depui (Ft.)	No.	Rec.	Lab ID	(ppm)		Į Vi	sual Description	n		llation	(Ft. MSL)
<del></del>	N N	(Ft.,%)				<u> </u>	<del></del> -		De	tail	
1 1.0	1							, ,		_	
								1.0			
2 7	S-1		RCH-ASU-	0.0				-		-	
<u> </u>		]	012-70001					-	111	-	
3 3.0		1		1				3.0		-	•
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ORILLER:	(b) (4)	face, Inc.					BAKER REP.:				
	(~) ( ·)					В	ORING NO.:	PRA6-Bor	ing B	SHEET	1 OF 1

# Saker Environmental

PROJECT: SO NO.:	Site	Characte 03-RIC	rization at	Columb	ia Gas	Transmiss	ion - Former R	ich Hill C	ompress	or Statio	n
COORDINA					-	BORING		PRA6-	Boring C		
ELEVATIO		FACE:			-	NORTH:					
		TACE.			•	TOP OF	PVC CASING:				
Rig: Ge	oprobe										Depth to
	MC	Casing	Augers	Core	e	Date	Progress		Weath	er	Water
	Liners			Barr	el		(Ft.)				(Ft.)
Size (ID)	1-5/8" I.D.		-		2/	3/97	0.0 - 3.0				
Length	4.0 feet		***								<del> </del>
Туре										·	
Hammer W	′t										<del> </del>
Fall											<del> </del>
Remarks:	Background	Samples-	Table 1								<u> </u>
		MPLE T					WELI	INFOR	MATIO	N	
'	S = Split	Spoon A	A = Auger					2.11 010		Тор	Bottom
	T = Shelt	y Tube V	W = Wash				Type		Diam.	Depth	Depth
	R = Air		C = Core				- <b>JF</b> -			(Ft.)	(Ft.)
	D = Deni	son l	P = Piston						t	(1 6.)	(1 1.)
		No Sam									
	Sample	Sample	ľ	PID					w	ell	Elevation
Depth (Ft.)	,	Rec.	Lab ID	(ppm)		Vi	isual Descriptio	n		lation	(Ft. MSL)
<del></del>	No.	(Ft.,%)					•			tail	(= 1.1102)
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RILLING C	O.: Subsu	face Inc.				Е	AKER REP.:	(D) (4)			
RILLER:	(D) (4)						ORING NO.:	PRA6-Bor	ring C	SHEET	7 1 OF 1
				_					<u> </u>		<u> </u>

## APPENDIX G

## Worksheet for Site-Specific Calculated Background Value for Arsenic (CBVA) Determination

### II. BACKGROUND CALCULATION

### Arsenic Results in Background Samples

a = 10.6 mg/kg b = 5.8 mg/kgc = 13.5 mg/kg

n = number of sample results

### **Background Arsenic Level Calculation**

[ 
$$(a + b + c)/n$$
] x 2 = Background Arsenic Level (BAL), Calculated  
[  $(10.6 + 5.8 + 13.5)/3$ ] x 2 = BAL, Calculated  
(29.9/3) x 2 = BAL, Calculated  
9.966 x 2 = BAL, Calculated  
19.93 mg/kg = BAL, Calculated

### III. COMPARISON TO HIGHEST BACKGROUND RESULTS

BAL, Calculated vs. Highest Background Result

19.93 mg/kg vs. 13.5 mg/kg

### SITE SPECIFIC BACKGROUND ARSENIC LEVEL = 19.93 mg/kg

\*Note: Calculations based on: "Data Collection and Evaluation, Human Health Risk Assessment Bulletin, No. 2, Supplemental Guidance to RAGs," Office of Technical Services, U.S. EPA Region IV, October 1996